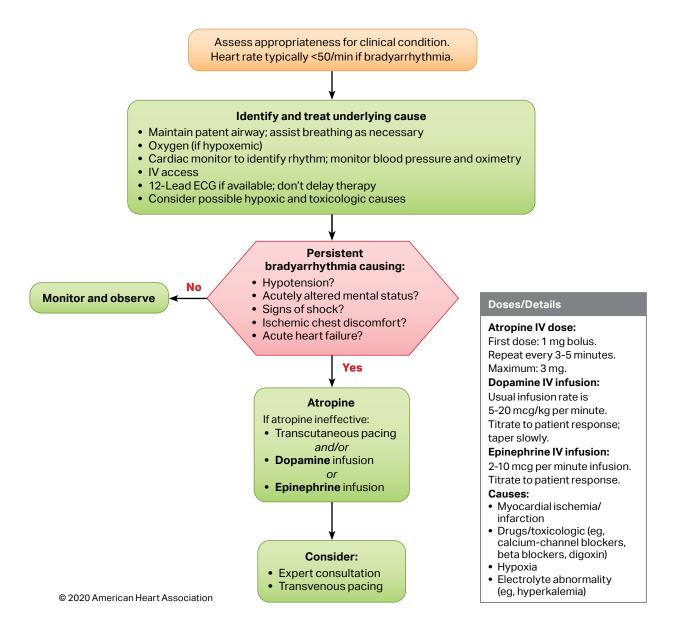
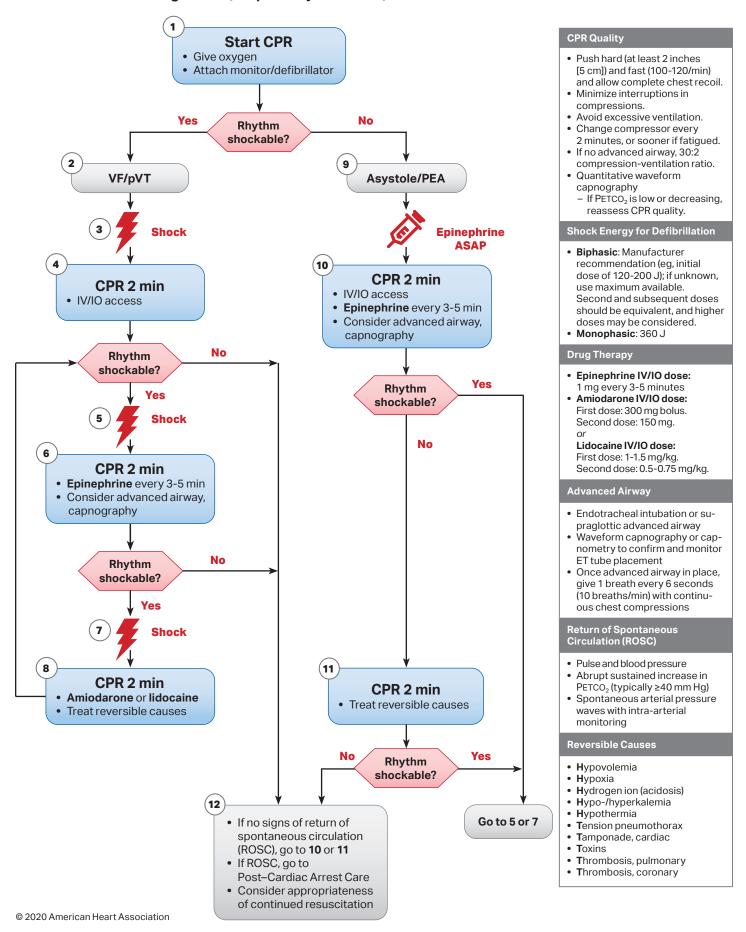
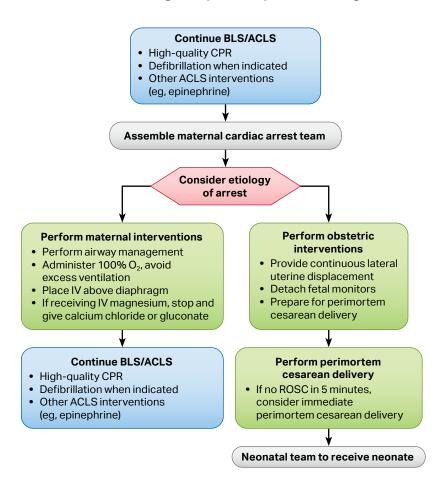
Adult Bradycardia Algorithm



Adult Cardiac Arrest Algorithm (VF/pVT/Asystole/PEA)



Cardiac Arrest in Pregnancy In-Hospital ACLS Algorithm



Maternal Cardiac Arrest

- Team planning should be done in collaboration with the obstetric, neonatal, emergency, anesthesiology, intensive care, and cardiac arrest services.
- Priorities for pregnant women in cardiac arrest should include provision of high-quality CPR and relief of aortocaval compression with lateral uterine displacement.
- The goal of perimortem cesarean delivery is to improve maternal and fetal outcomes.
- Ideally, perform perimortem cesarean delivery in 5 minutes, depending on provider resources and skill sets.

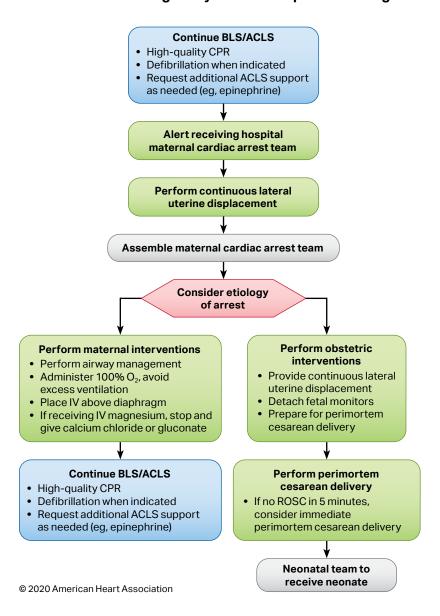
Advanced Airway

- In pregnancy, a difficult airway is common. Use the most experienced provider.
- Provide endotracheal intubation or supraglottic advanced airway.
- Perform waveform capnography or capnometry to confirm and monitor ET tube placement.
- Once advanced airway is in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions.

Potential Etiology of Maternal Cardiac Arrest

- A Anesthetic complications
- **B** Bleeding
- C Cardiovascular
- **D** Drugs
- E Embolic
- **F** Fever
- **G** General nonobstetric causes of cardiac arrest (H's and T's)
- **H** Hypertension

Cardiac Arrest in Pregnancy Out-of-Hospital ACLS Algorithm



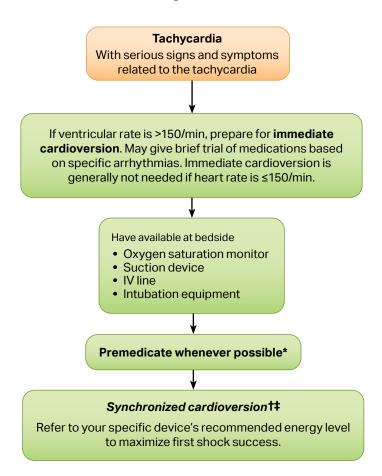
Maternal Cardiac Arrest

 Priorities for pregnant women in cardiac arrest should include provision of high-quality CPR and relief of aortocaval compression with lateral uterine displacement.

Potential Etiology of Maternal Cardiac Arrest

- A Anesthetic complications
- **B** Bleeding
- C Cardiovascular
- **D** Drugs
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- F Fever
- **G** General nonobstetric causes of cardiac arrest (H's and T's)
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Electrical Cardioversion Algorithm



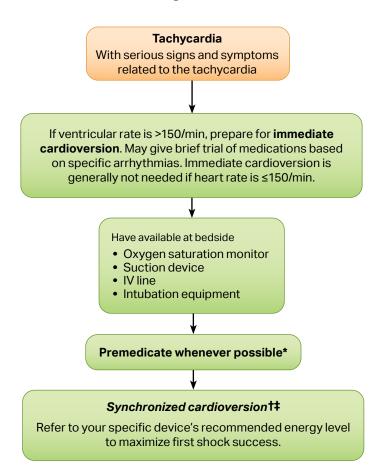
Notes

*Effective regimens have included a sedative (eg, diazepam, midazolam, etomidate, methohexital, propofol) with or without an analgesic agent (eg, fentanyl, morphine). Many experts recommend anesthesia if service is readily available.

†Note possible need to resynchronize after each cardioversion.

 \ddagger If delays in synchronization occur and clinical condition is critical, go immediately to unsynchronized shocks.

Electrical Cardioversion Algorithm



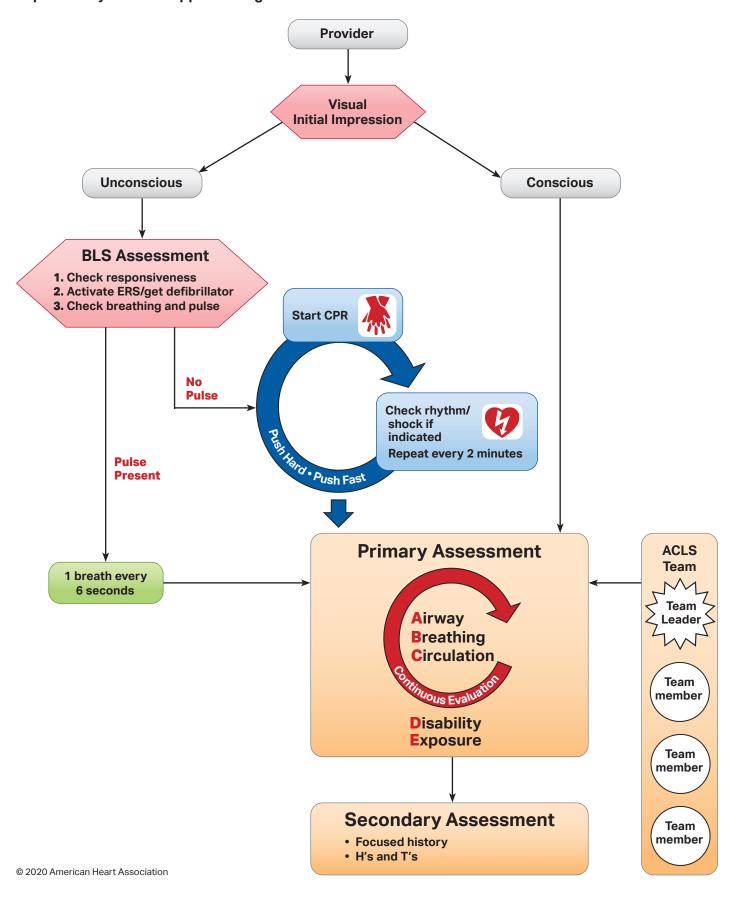
Notes

*Effective regimens have included a sedative (eg, diazepam, midazolam, etomidate, methohexital, propofol) with or without an analgesic agent (eg, fentanyl, morphine). Many experts recommend anesthesia if service is readily available.

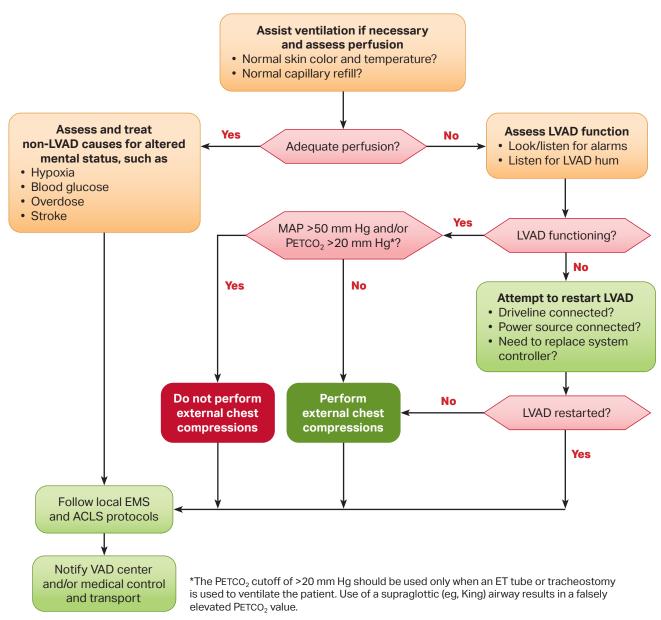
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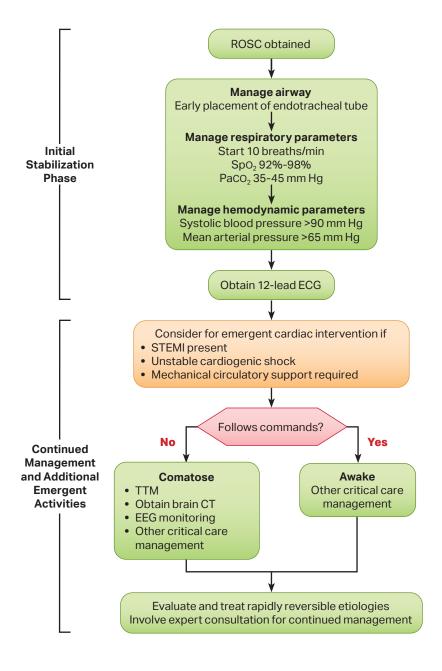
Expanded Systematic Approach Algorithm



Adult Ventricular Assist Device Algorithm



Adult Post-Cardiac Arrest Care Algorithm



Initial Stabilization Phase

Resuscitation is ongoing during the post-ROSC phase, and many of these activities can occur concurrently. However, if prioritization is necessary, follow these steps:

- Airway management: Waveform capnography or capnometry to confirm and monitor endotracheal tube placement
- Manage respiratory parameters: Titrate FIO₂ for SpO₂ 92%-98%; start at 10 breaths/min; titrate to PaCO₂ of 35-45 mm Hg
- Manage hemodynamic parameters: Administer crystalloid and/or vasopressor or inotrope for goal systolic blood pressure >90 mm Hg or mean arterial pressure >65 mm Hg

Continued Management and Additional Emergent Activities

These evaluations should be done concurrently so that decisions on targeted temperature management (TTM) receive high priority as cardiac interventions.

- Emergent cardiac intervention:
 Early evaluation of 12-lead
 electrocardiogram (ECG); consider
 hemodynamics for decision on
 cardiac intervention
- TTM: If patient is not following commands, start TTM as soon as possible; begin at 32-36°C for 24 hours by using a cooling device with feedback loop
- Other critical care management
 - Continuously monitor core temperature (esophageal, rectal, bladder)
 - Maintain normoxia, normocapnia, euglycemia
 - Provide continuous or intermittent electroencephalogram (EEG) monitoring
 - Provide lung-protective ventilation

H's and T's

Hypovolemia

Hypoxia

Hydrogen ion (acidosis)

Hypokalemia/hyperkalemia

Hypothermia

Tension pneumothorax

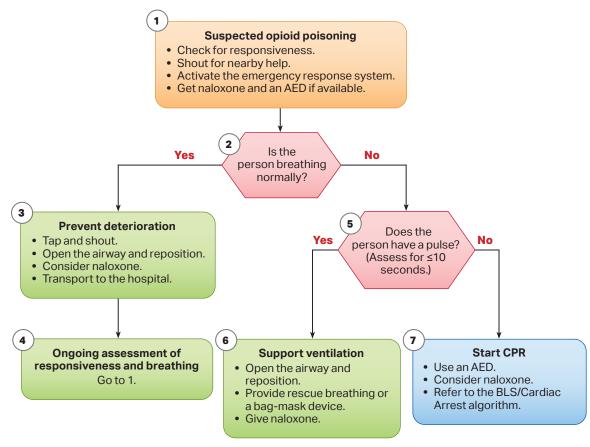
Tamponade, cardiac

Toxins

Thrombosis, pulmonary

Thrombosis, coronary

Opioid-Associated Emergency for Healthcare Providers Algorithm



Identify signs and symptoms of possible stroke Activate emergency response

Critical EMS assessments and actions

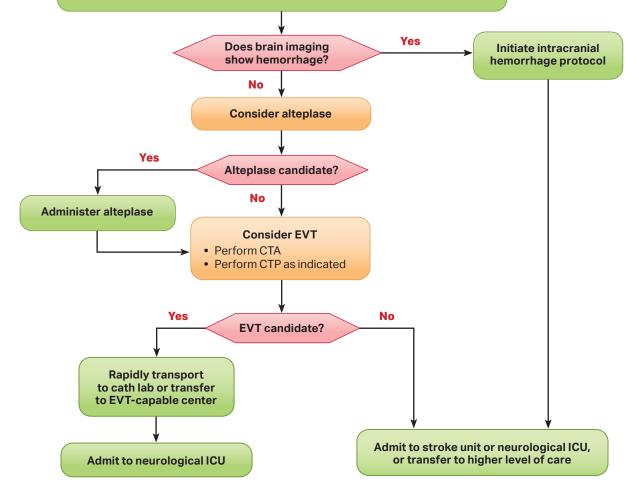
- · Assess ABCs; give oxygen if needed
- · Initiate stroke protocol
- · Perform physical exam
- Perform validated prehospital stroke screen and stroke severity tool
- Establish time of symptom onset (last known normal)
- Triage to most appropriate stroke center
- Check glucose; treat if indicated
- Provide prehospital notification; on arrival, transport to brain imaging suite

Note: Refer to the expanded EMS stroke algorithm.

ED or brain imaging suite*

Immediate general and neurologic assessment by hospital or stroke team

- Activate stroke team upon EMS notification
- Prepare for emergent CT scan or MRI of brain upon arrival
- Stroke team meets EMS on arrival
- Assess ABCs; give oxygen if needed
- Obtain IV access and perform laboratory assessments
- · Check glucose; treat if indicated
- Review patient history, medications, and procedures
- Establish time of symptom onset or last known normal
- Perform physical exam and neurologic examination, including NIH Stroke Scale or Canadian Neurological Scale
- *Best practice is to bypass the ED and go straight to the brain imaging suite.



Symptoms suggestive of ischemia or infarction EMS assessment and care and hospital preparation Assess ABCs. Be prepared to provide CPR and defibrillation · Administer aspirin and consider oxygen, nitroglycerin, and morphine if needed · Obtain 12-lead ECG; if ST elevation: Notify receiving hospital with transmission or interpretation; note time of onset and first medical contact · Provide prehospital notification; on arrival, transport to ED/cath lab per protocol • Notified hospital should mobilize resources to respond to STEMI · If considering prehospital fibrinolysis, use fibrinolytic checklist Concurrent ED/cath lab assessment Immediate ED/cath lab general treatment (<10 minutes) • If O₂ sat <90%, start **oxygen** at 4 L/min, titrate Activate STEMI team upon EMS notification Aspirin 162 to 325 mg (if not given by EMS) · Assess ABCs; give oxygen if needed • Nitroglycerin sublingual or translingual Establish IV access Morphine IV if discomfort not relieved by Perform brief, targeted history, physical exam nitroglycerin Consider administration of P2Y₁₂ inhibitors Review/complete fibrinolytic checklist; check contraindications · Obtain initial cardiac marker levels, complete blood counts, and coagulation studies Obtain portable chest x-ray (<30 minutes); do not delay transport to the cath lab **ECG** interpretation ST elevation or new or Non-ST-elevation ACS (NSTE-ACS) presumably new LBBB; Determine risk using validated strongly suspicious for injury score (ie, TIMI or GRACE) ST-elevation MI (STEMI) ST depression or dynamic T-wave Normal ECG or nondiagnostic inversion, transient ST elevation; changes in ST segment or T wave; Start adjunctive therapies strongly suspicious for ischemia low-risk score as indicated Low-/intermediate-risk NSTE-ACS and/or high-risk score Do not delay reperfusion High-risk NSTE-ACS >12 Troponin elevated or high-risk patient Consider admission to **hours** Time from onset of ED chest pain unit or to Consider early invasive strategy if: symptoms ≤12 hours? appropriate bed for · Refractory ischemic chest discomfort further monitoring and • Recurrent/persistent ST deviation possible intervention Ventricular tachycardia ≤12 hours Hemodynamic instability · Signs of heart failure Reperfusion goals: Start adjunctive therapies Therapy defined by patient and (eg, nitroglycerin, heparin) as indicated center criteria See AHA/ACC NSTE-ACS Guidelines FMC-to-balloon inflation (PCI) goal of ≤90 minutes Door-to-needle (fibrinolysis) goal of 30 minutes © 2020 American Heart Association

Adult Tachycardia With a Pulse Algorithm

